Ways to Use Your Free NCBI Account More Efficiently

Teaching NCBI Resources

Through Use Cases And Examples

Introduction

The NCBI account system is a free service users can register and set up to customize their search experiences and support their specific needs. It supports a My NCBI dashboard with an integrated set of tools to allow you to set and customize your NCBI website function and display preferences. It is also used by eRA Commons of NIH for grant progress report, and bioscketch creation. Detailed description of this service is provided by an entry from the NCBI help manual https://www.ncbi.nlm.nih.gov/books/NBK3843/

You should get an NCBI account so you can use the NCBI site to:

- Set your highlighting format for search terms
- Customize your displayed PubMed filters
- Save and automate searches with Emailed notifications of new records
- Save and create collections
- Create and manage citations
- Create and publicly display your professional profile
- · Set LinkOut, Outside tool and document delivery preferences
- and much more!

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1. WHY SHOULD YOU GET AN NCBI ACCOUNT

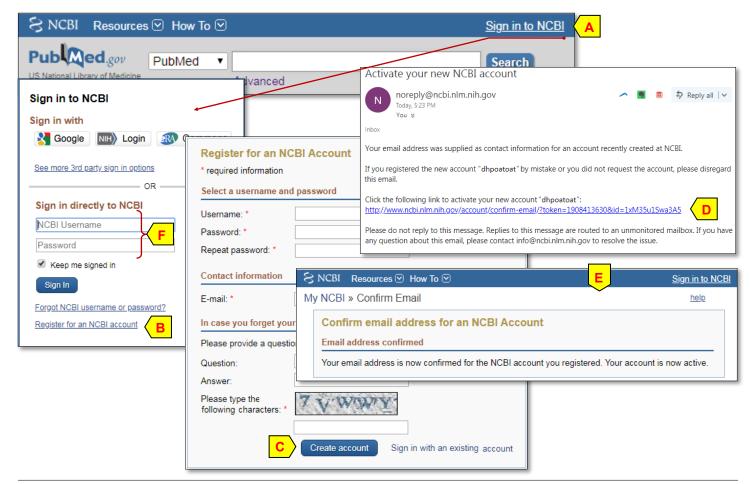
The NCBI account system was designed with customizable tools to support each user's specific needs. The NCBI account has an My NCBI dashboard with an integrated set of tools to allow you to set and customize your NCBI website function and display preferences. You can use this to:

- Set your preferred highlighting format for search terms
- Set Outside Tool, Document Delivery, and Genetic Testing Laboratory preferences
- Set default displayed and create your own custom search result filters
- Save and automate searches to send Emailed notifications of new records
- Create collections to save interesting database records
- Create and manage a collection of your publications listing (bibliography)
- Make publicly-available any of your collections with a direct URL to share
- Manage NIH Public Access compliance for grant-funded publications
- and much more!

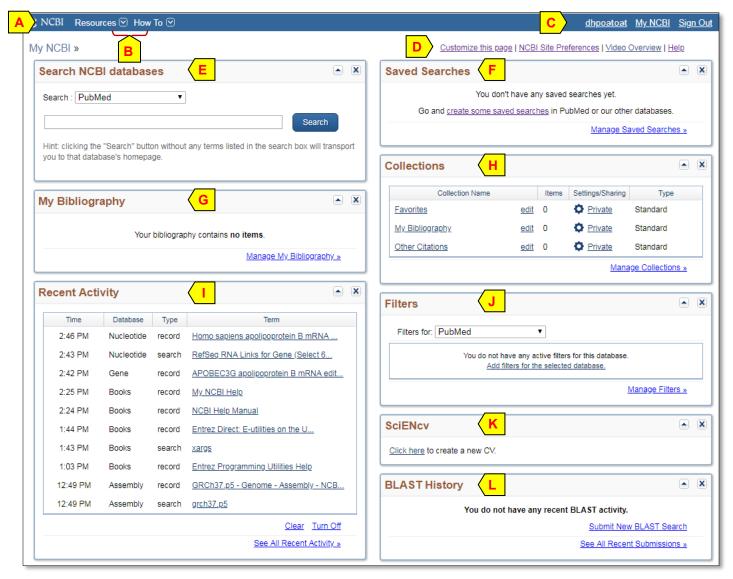
2. REGISTERING FOR A NCBI ACCOUNT

- At the top of most NCBI/PubMed pages, click "Sign in to NCBI" (A) located on the top right of the toolbar.
- Click "Register for an NCBI account" (B).
- Fill in the form and "Create account" (C).
- You should see a screen that has acknowledged with "Success!" the creation of the account and sends a
 message to the Email of record for validation.
- On the email message, click the activation link (D) to confirm your account.
- With the activation link clicked, a webpage (E) will indicate confirmation of the account and the email.

From now on, you may "Sign in" to your account by clicking on the "Sign in" link at the top of most NCBI/PubMed pages or directly from the NCBI account login page at https://www.ncbi.nlm.nih.gov/account (F)



3. THE MY NCBI DASHBOARD EXPLAINED



- A. NCBI logo: return to NCBI homepage.
- B. Resources & How To: quick access to other NCBI resources & assistance in "how to" through pull-down menus.
- C. My NCBI set of links
 - <u>Username</u>: change account settings with link to preferences
 - My NCBI: return or reload My NCBI dashboard
 - Sign Out: log out of your My NCBI account.
- D. Customization & Help links
 - Customize this page remove/add portlet from the My NCBI dashboard
 - <u>NCBI Site Preferences</u> access and customize preferences for specific NCBI databases
 - Video Overview and Help provides information on how to use My NCBI.
- E. Search NCBI databases: provides search access to NCBI databases through pull-down menu
- F. Saved Searches: provides automatic e-mail updates of saved search queries on a daily, weekly or monthly basis.
- G. My Bibliography: manually create. Upload, and save your citations for export and sharing with others
- H. Collections: unlimited collections of search results that can be shared with others
- Recent Activity: a history of recently performed searches and retrieved records in NCBI databases
- J. Filters: narrow down search results based on your preferred filters, limited to 15 for PubMed, and 5 for others
- K. SciENcv: create an official online professional profile in multiple formats for NIH, NSF, and IES (Institutes of Educational Science), for grant application and sharing with others
- L. BLAST History: a summary list of recently performed BLAST searches whose results have not expired

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4. CREATING EFFECTIVE PubMed SEARCHES

Documentation: https://go.usa.gov/xPaY6

4a. Searching with a Phrase

The Entrez Search system does **not** perform term adjacency searching. To define a phrase to search, you can use an underscore (_) between each word or you can double quote the phrase. However, if the phrase is not found in the indexed list of terms, then the presence of the underscore or quotes is ignored and the phrase is processed with each individual word separately, connected with AND Boolean operators.

4b. Using Booleans

The Entrez Search system employs operators used to exclude or combine search terms.

- AND retrieves results that include all the search terms.
- OR retrieves results that include **at least one** of the search terms.
- NOT **excludes** the retrieval of the term from your search.

NOTE: PubMed applies the AND Boolean operator automatically between terms, for example, *vitamin c common cold* is translated to *vitamin c AND common cold*.

Automatic Term Mapping (ATM)

The Entrez Search system tries to assist users by attempting to automatically recognize specific terms and improve the specificity of the search. The Entrez search activates ATM when there are no quotation marks, underscores, asterisks or delimited-indexing fields in the query (marked by [field name], such as in [author]). For PubMed searches, it first tries to match terms indexed within these specific PubMed indexing fields, in this order: 1) MeSH terms, 2) Journal, and then 3) Author

As soon as the Entrez Search system finds a match in the specific fields, it stops processing the search terms. If no match is found, Entrez breaks apart any phrases and repeats the process in the specific fields until a match is found. Finally, the system searches the phrases and individual terms in **All Fields** (with [All Fields] as field limit) and displays any results it obtains. The Search Details portlet in the right hand column contains the ATM processed terms used by the system.

Documentation: https://go.usa.gov/xPagg

4c. Truncating Search Terms

Truncating a search term means to search for all terms that begin with a word and followed by an asterisk (*), the wildcard character, such as in tox*. The Entrez Search system alphabetically iterates the first 600 variations of a truncated term. If more than 600 variations are found, a warning message displays with suggestion to lengthen the root word to search for all endings. Please keep in mind that this turns off ATM mentioned in the box above.

4d. Searching Terms in Specific Database Fields

Database records are structured in specific fields for specific data. The Advanced Search Builder provides a list of database-indexed fields with the ability to see an alphabetical display of all terms indexed in each database search field.

To increase specificity for your search, you can indicate a specific field in which to search for matches to the term. To do this, after the search term add the specific field name or its abbreviation in square brackets, such as in "morris rc"[author] or "morris rc"[au]. Please note that inclusion of indexed field terms manually bypasses the ATM.

Video: https://www.youtube.com/watch?v=uyF8uQY9wys

Documentation: https://go.usa.gov/xPa5W

4e. Using the Advanced Search Builder

In addition to displaying a list of database-indexed fields, the Advanced Search Builder can assist the stepwise creation of effective searches by helping in the formation of specifically indexed terms in designated fields and encouraging the use of Booleans to connect multiple search terms.

- Go to the Advanced Search Builder page by clicking "Advanced" below the search query textbox.
- To see the list of Indexing fields, click and scroll down the "All Fields" pull-down menu.
- To see the terms listed in a particular field, click the name of the indexing field of your choice.
- Click "Show Index" to see an alphabetized list of the terms indexed in that field with the number shown in the parentheses (200 are shown at a time).
- To see if a term is listed or to zoom-down through the list quickly, type in the text box next to the field name and click "Refresh Index". Some fields have an autocomplete feature.
 - Click on a term of interest and notice that it will both be added to the text box next to the field. It will also be added to the Search Builder's shaded box at the top with the field listed in square brackets. You can edit this text directly, if desired, by clicking the "Edit" below the shaded box.

More information on Advanced Search Builder:

In a traditional search, terms entered in the text box are automatically combined with the Boolean operator AND unless otherwise specified. However, the Advanced Search Builder automatically adds OR terms. In addition, it also processes the terms in a specific order from left-to-right adding parentheses for multiple terms selected from the Search Builder.

Video: https://www.youtube.com/watch?v=dncRQ1cobdc
A selective list of indexing fields: https://go.usa.gov/xPaQK

4f. Combining Searches Using History

Searches can be combined or used in subsequent searches using the search number from Advanced Search History which is located at the bottom of the Advanced Search Builder page.

- To access the "History" service, click "Advanced" under the search query text box.
- In the History section, click Add to move a previous search into the Builder text box.
 - ♦ Alternatively, click the search number to display additional options to add the search to the Builder, including Boolean operators OR or NOT.
- Add additional search terms to the Builder, if desired.
- Click Search.

More information on using History:

The history feature requires your web browser to be set to accept cookies. Click "Clear history" to delete all searches from history or it will be cleared automatically after 8 hours of inactivity on the NCBI web site.

Documentation: https://go.usa.gov/xPaQ8

4g. Tips on Using Medical Subject Heading Terms (MeSH) in PubMed

MeSH is a controlled vocabulary created by the National Library of Medicine for indexing of scientific and medical literature. MeSH terms are manually added to PubMed records to improve searching. However, this takes time, so while PubMed records may be visible in PubMed it may take a few months before a PubMed search exploiting MeSH field indexing is effective in retrieving the record.

Websites: https://www.nlm.nih.gov/mesh/ & https://www.ncbi.nlm.nih.gov/mesh/

Video: https://www.youtube.com/watch?v=uyF8uQY9wys

5. CUSTOMIZING DISPLAYS OF SEARCH RESULTS

Customization within the NCBI Databases allows you to

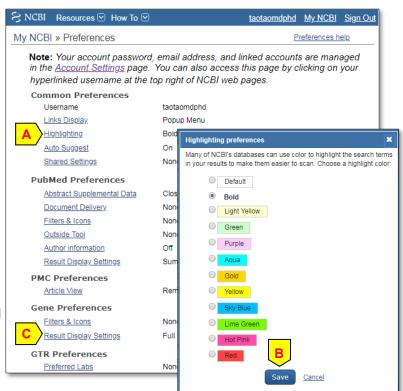
- Highlight search terms to quickly scan results
- Sort records based on your own preference.
- Display up to 200 search results per page.

Video: http://bit.ly/2CKp8HU

Documentation: https://go.usa.gov/xPaUW

5a. Setting the Format of Highlighting for Search Terms

- Sign in to your NCBI account using: https://www.ncbi.nlm.nih.gov/account
- Click My NCBI to access your Dashboard.
- Click NCBI Site Preferences, located on the right.
- Locate the Common Preferences section and click Highlighting (A).
- Select the designated color from the pop-up window and click Save (B).



5b. Adjusting the Number of Records Displayed and Sort Criteria

- On the NCBI Site Preferences page, locate the PubMed Preferences section and click Result Display Settings (C).
- In the *Default* items per page section, click the number of records you want to display by default (up to 200 records).
- In the *Default* sort by section, click your preferred parameter for default sorting (most recent, best match, publication date, first author, last author, journal or title).
- Click Save.

5c. Choosing preferred Document Delivery Services

This is a feature of PubMed that allows you to order articles from an institution of your affiliation. By default, orders are set to Loansome Doc, the document delivery service of the National Library of Medicine.

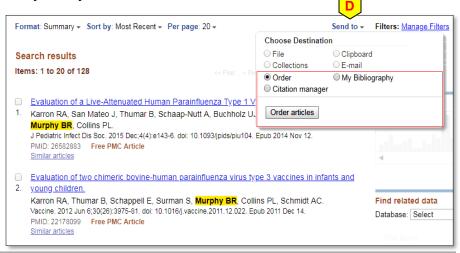
To change the Document Delivery Service:

- On the NCBI Site Preferences page, click Document Delivery under the PubMed Preferences section.
- Select your choice of document delivery service.

The service will only work while signed into your My NCBI account

To order a document:

- Conduct your search in PubMed
- Check the left-hand side box next to the citation you wish to order.
- Sign in to your NCBI account by clicking "Sign in to NCBI", if not already signed in.
- Click the Send to (D) link and the Order radio button in the dialog box..
- You will be directed to the Document Delivery Service form for the service of your choice.



5. CUSTOMIZING DISPLAYS OF SEARCH RESULTS (cont.)

5d. Identifying Preferred Outside Tools

Outside Tool allows libraries to add a link from PubMed citations to connect you to the available materials within your library. The materials may include access information on local print holdings to electronic full text.

- Sign in to your NCBI account using: https://www.ncbi.nlm.nih.gov/account
- Click NCBI Site Preferences, located on the right.
- Locate the PubMed Preferences section and click Outside Tool.
- Select your affiliated institution and click Save.

5e. Selecting Preferred Labs Listed in the Genetic Testing Registry

Pre-select your choice of vendors listed in the Genetic Testing Registry (GTR) to limit search results shown to tests offered by these laboratories.

- Sign in to your NCBI account.
- Click My NCBI to access your Dashboard.
- Click NCBI Site Preferences, located on the right.
- Locate the GTR Preferences section and click Preferred Labs.
- Click the **GTR website** to be redirected to locate your preferred vendor.

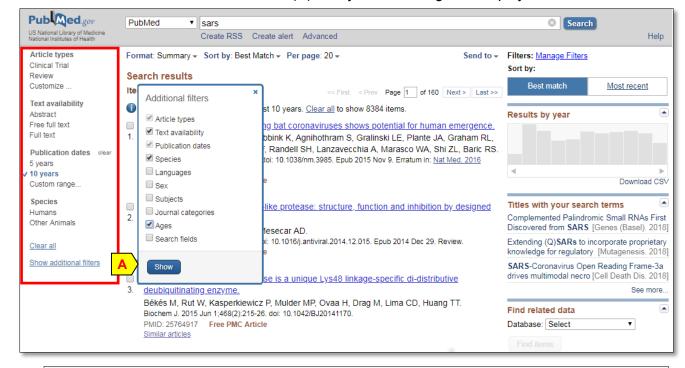
6. USING THE FILTER SIDEBAR & CREATING CUSTOM FILTERS

Filters assist in narrowing down search results to smaller groups of data in the NCBI databases. PubMed has a built-in filter sidebar and the ability to create custom filters to achieve more efficient and effective results.

6a. Using the Filter Sidebar

Narrow search results by article types, full-text availability, publication dates, species, languages, sex, subjects, journal, ages and search fields.

- · Perform a search.
- Click a term in the Filter sidebar (on the left) to filter the list of results.
- Click the "Show additional filters" link (A) to adjust filter categories displayed in to the sidebar.



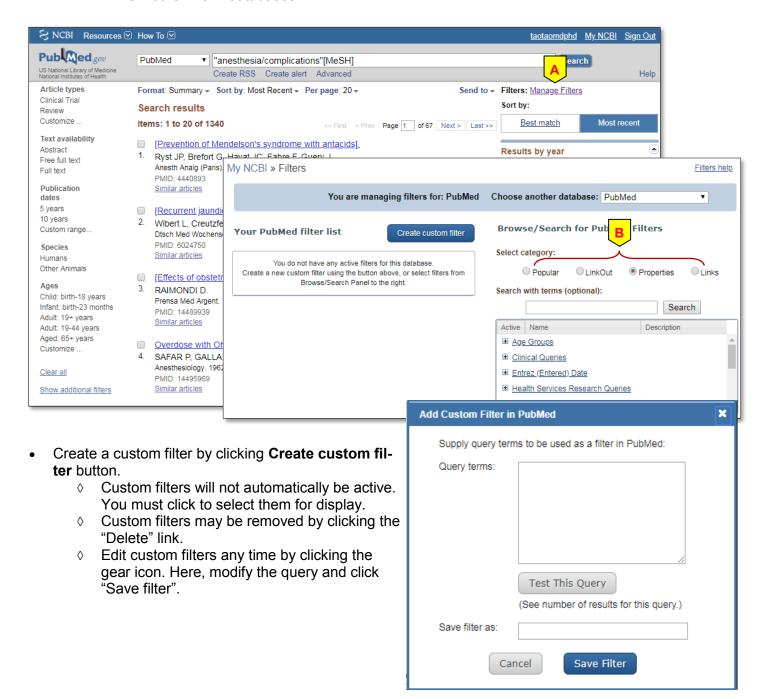
Please note: A checkmark will appear beside the activated filter and subsequent searches will be filtered until the selected filters are cleared. Click "clear" to remove an individual filter, or click "clear all" for all at once.

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6. USING THE FILTER SIDEBAR & CREATING CUSTOM FILTERS (cont.)

6b. Creating your own custom filters and choosing the filters to display

- Sign in to your NCBI account using: https://www.ncbi.nlm.nih.gov/account
- Click Manage Filters link (A) in the Filters portlet (on the top, right-hand side of the page).
- Browse and select from the list of filters pre-defined filters (B):
 - ♦ Popular most commonly requested filters.
 - ♦ LinkOut links to resources provided by outside organizations.
 - Properties -groups based on specific criteria (such as: gender, language, age groups, etc.)
 - Links other NCBI databases.



Video - Using Filters: http://www.nlm.nih.gov/bsd/viewlet/myncbi/filters.html

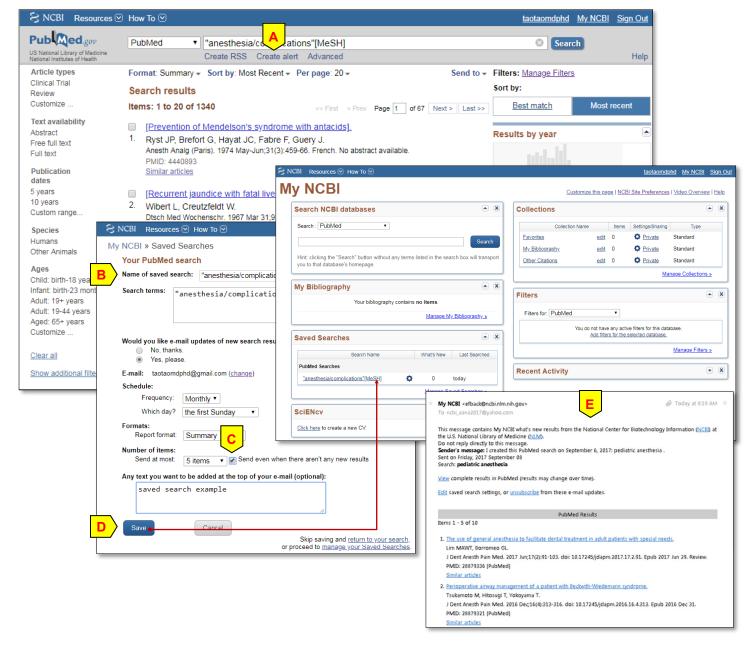
Video - Creating Custom PubMed Filters: https://www.youtube.com/watch?v=696R9GbOyvA

Documentation: https://go.usa.gov/xPCpC

7. SAVING SEARCH STRATEGIES & AUTOMATING EMAILED ALERTS

Save search queries for PubMed and NCBI databases with the ability to have automatic e-mail updates on a daily, weekly or monthly basis.

- Sign in to your NCBI account using: https://www.ncbi.nlm.nih.gov/account
- Run a search in PubMed.
- Click Create alert (A), located below the search box.
- Click Save search if using a different NCBI database.
 - The pop out window will allow you to edit the search name (B, up to 100 characters).
 - **The name of the search will be the in the Subject line of the e-mail**
- Schedule the email saved searches and review the remaining fields.
 - **Select "Send even when there aren't any new results" (C) to verify it is running correctly**
- Click "Save" button (D) to add the entry to "Saved Searches" portlet.
- An email notification will look like this (E)



Video - Saving and Automating Searches: https://go.usa.gov/xPC62

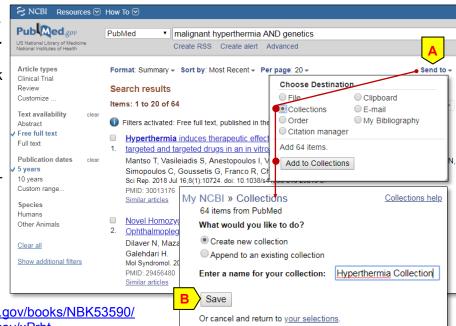
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8. SAVING & SHARING COLLECTIONS OF RECORDS

Searches can be shared and saved. Within a My NCBI account, there are two ways to save citations. My Bibliography saves your authored citations from NCBI databases or citations may be manually entered. Collections is a reference tool that saves citations from the NCBI data base authored by other researchers.

8a. Save Records by Creating a New Collection or Adding Them to an Existing One

- In the search results, use the check boxes to select citations.
- Click **Send to**, check the **Collec**tions radio button, then the Add to Collections button (A)
- Select an existing or create a new Collection in which to add your citation, click Save (B) to add.



Documentation: https://www.ncbi.nlm.nih.gov/books/NBK53590/

Video - Editing Collections: https://go.usa.gov/xPrbt

Video - Saving Records in Collections: https://www.youtube.com/watch?v=iXSttEKntCE

8b. Getting a Public URL to Share a Collection

By default, all collections (including My Bibliography) in your My NCBI Dashboard is set as "Private" and thus inaccessible by a URL. You can manually change the collection to become "Public" which will generate a URL that you can share with others. Please note the URL will not be indexed by search engines but will be visible



You can always click the gear next to a collection to get de-

tails of the Collection, such as the public URL (D), which points to the collection (E) when shared.

Video - Sharing Collections: https://go.usa.gov/xPr9g

8. SAVING & SHARING COLLECTIONS OF RECORDS (cont.)

8c. Using My Bibliography and Sharing It

"My Bibliography" (A) is an enhanced/special "Collection" for you to list your own PubMed- and PMC-listed publications, plus those not listed at NCBI, such as publications in non-PubMed listed journals or book chapters. This collection has the same functionality as others collections. Those functions are accessible through the "Manage My Biblography" link (B). For example, it provides the ability to export the collection, or share the collection for use as a hyperlink (C) in a Fac-

My Bibliography also serves as a source for the SciENcv (D), which can help you create a biosketch for federal grant applica-

My NCBI » My Bibliography

Journal Articles

Bibliography permission update successful.

PMCID: PMC3692093.

Cited in PMC Related citations

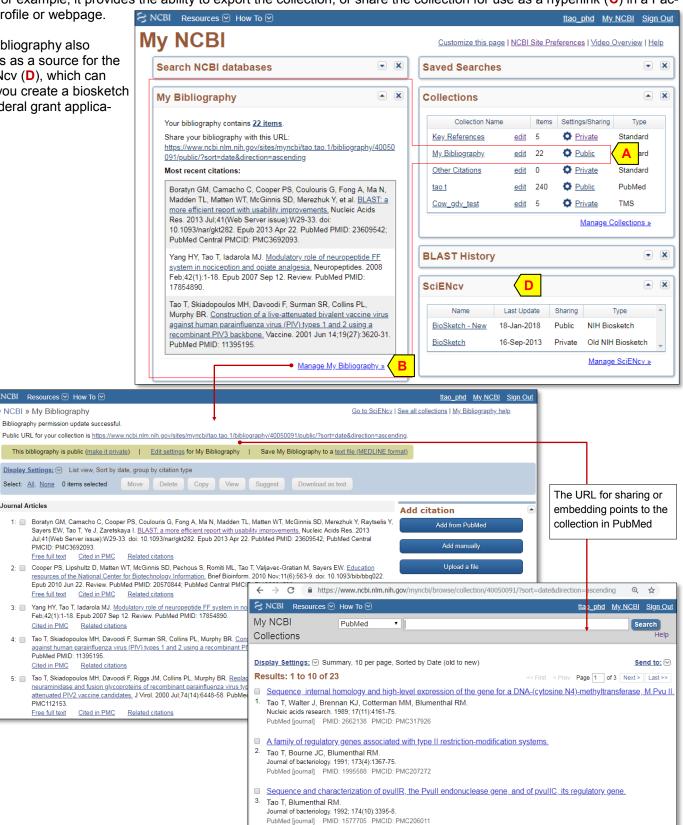
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tion.

ulty Profile or webpage.



9. THINGS TO KEEP IN MIND FOR NIH GRANT FUNDING

Learn about grants offered by NIH and up-to-date funding opportunities: https://grants.nih.gov

9a. Linking your eRA Commons & NCBI accounts

The NIH Electronic Research Administration provides an online system (eRA Commons) for researchers to track the status of their grant applications, view award notices, submit required documentation and create annual progress reports using the Research Performance Progress Report (RPPR). Linking an eRA Commons account an NCBI account will help in pre-award grant application preparation and post-award reporting.

Website: https://era.nih.gov/

Documentation: https://go.usa.gov/xPrzA

9b. Creating your grant application's biosketch with SciENcv

The NCBI, in collaboration with many other federal agencies and organizations, has created the Science Experts Network Curriculum Vitae (SciENcv). This is an NCBI application that produces federal grant proposal biosketches for inclusion with federal grant applications. The data included is automatically repurposed from an existing My Bibliography, eRA Commons, and other 3d party accounts such as ORCID and NSF.

Website: https://www.ncbi.nlm.nih.gov/sciencv/

Video: https://www.youtube.com/watch?v=PRWy-3GXhtU

Documentation: https://go.usa.gov/xPrzH

9c. Complying with the NIH Public Access Policy and grant reporting

The NIH Public Access Policy (NIHPA) is based on a legal statute [Division G, Title II, Section 218 of Public Law 110-161 - Consolidated Appropriations Act, 2008] and requires that:

"all investigators funded by the NIH submit or have submitted for them to the National Library of Medicine's PubMed Central an electronic version of their final, peer-reviewed manuscripts upon acceptance for publication, to be made publicly available no later than 12 months after the official date of publication: Provided, That the NIH shall implement the public access policy in a manner consistent with copyright law."

Website – NIH Public Access: https://publicaccess.nih.gov/index.htm
Documentation – eRA Commons NIHPA Compliance Guide: https://go.usa.gov/xPru9

9d. Tracking NIHPA compliance and reporting NIH grant-funded publications with My Bibliography NIHPA Compliance requires submission of NIH-funded publications to the NIH Manuscript Submission (NIHMS) System which processes the documents for inclusion in the PubMed Central (PMC) database.

Website - NIHMS: https://www.nihms.nih.gov/db/sub.cgi

Documentation - NIHPA Submission Methods: https://publicaccess.nih.gov/submit process.htm

Video – NIHMS Submission: https://www.youtube.com/watch?v=IIEBtfnSqMA

The progress of grant-funded publications, from submission through processing and inclusion in PMC, can be tracked in My Bibliography and this tool will repurpose this information to generate the required C.1 publication table for your Annual and Final Research Performance Progress Reports (RPPRs).

Documentation: Managing NIHPA Compliance with your NCBI account https://go.usa.gov/xPruN

Video – Public Compliance with My Bibliography: https://youtu.be/JYODIOD YYE

Documentation - NIH RPPR Guide: https://grants.nih.gov/sites/default/files/rppr instruction guide.pdf

Finally, organizations can track the compliance status of their institution's NIH grant-funded publications with the NIHPA Compliance Monitor - which can be accessed with an NCBI account.

Website - NIH Public Access Compliance Monitor: https://www.ncbi.nlm.nih.gov/pmc/utils/pacm/

Documentation - Compliance Monitor Guide: https://www.ncbi.nlm.nih.gov/pmc/utils/pacm-user-guide.pdf